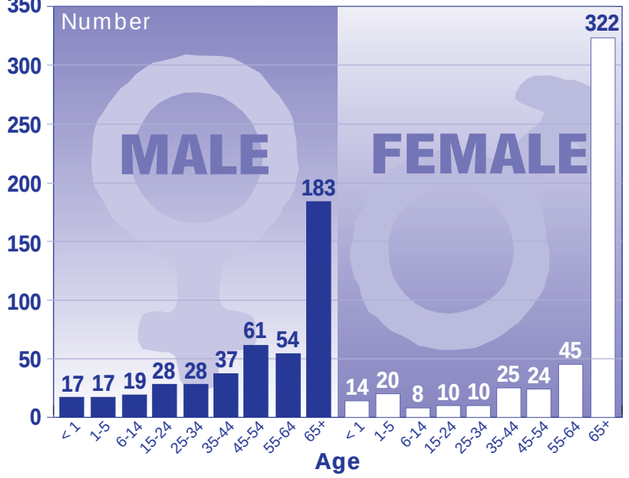
Of the total traumatic brain injuries due to falls, 54.8 percent were from the age group 65 years old and older. Of the 478 females who suffered a head injury due to a fall, 67.4 percent were 65 years old or older, compared to 41.2 percent of the 444 males.

Approximately 3.4 percent of the accidental falls causing a head injury were work related.

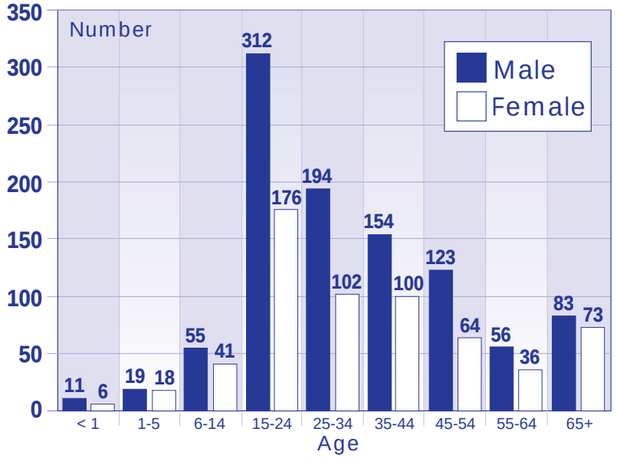
Of the 1007 males who were involved in a motor vehicle crash, 31.0 percent were ages 15 to 24 years compared to 19.3 percent in ages 25 to 34 years. These two age groups accounted for over half of the total motor vehicle related injuries. For both males and females, there were more injuries (30.1 percent) in the 15 to 24 year age group than any other group.

Less than 2 percent of the total motor vehicle crashes were work related. Of the total head injuries from motor vehicle traffic crashes, 7.3 percent resulted in a severe brain injury; 32.1 percent was classified as moderate; 41.2 percent was classified as mild; and the severity for 19.4 percent was undetermined.

Falls by Age and Sex



Motor Vehicle Traffice Crashes by Age and Sex



When all cases were included, 27.5 percent of the individuals with severe brain injuries were hospitalized more than seven days, compared to 33.9 percent of the individuals with injuries considered to be moderate, and 16.4 percent for those with mild injuries. For cases where severity was undetermined, 15.9 percent were hospitalized more than seven days.

When individuals who died are excluded from the analysis, 92.4 percent of people with severe brain injuries were hospitalized more than seven days, while the percent of individuals with lesser injuries showed little change.

Fifty-seven percent of the cases with hospital stays of more than 7 days were considered to have moderate brain injuries.

The length of stay could be affected by other injuries that occurred during the accident. The severity index by itself should not be used as a predictor or indicator of length of stay.

Severity of Injury by Length of Stay

			Severe		Moderate		Mild		Undetermined	
Length of Stay	Total	Died	Total	Died	Total	Died	Total	Died	Total	Died
Less than 24 hrs.	133	129	75	75	17	13	6	6	35	35
1 Day	571	61	44	43	127	11	265	2	135	5
2 Days	537	30	23	21	188	7	223	0	103	2
3 Days	415	19	11	11	166	6	162	1	76	1
4 Days	287	16	13	12	129	4	93	0	52	0
5 Days	233	9	4	3	113	5	83	0	33	1
6 Days	185	9	4	4	84	4	62	1	35	0
7 Days	137	16	8	8	68	7	38	0	23	1
8 to 14 Days	420	26	18	5	241	2-	118	1	54	0
15 to 21 Days	152	10	12	1	91	7	31	0	18	2
22 to 28 Days	93	5	17	1	53	3	16	1	7	0
29 Days or more	128	10	23	1	72	7	19	2	14	0
TOTAL	**3300**	**340**	**251**	**185**	**1349**	**94**	**1115**	**14**	**585**	**47**

Tennessee Traumatic Brain Injury Newsletter was published by the Tennessee Department of Health, Health Statistics, Cordell Hull Building, Nashville, Tennessee 37247

Marguerite Lewis, Director
For additional information please contact:
Glenda Polk, telephone (615) 532-7890

Tennessee Department of Health. Authorization No. 343115, July 2003.

Tennessee Department of Health
Health Statistics
Traumatic Brain Injury Registry
Cordell Hull Building, 4th Floor
425 5th Avenue North
Nashville, TN 37247

Tennessee Traumatic Brain Injury

2002

July - December

A traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force that may result in total or partial disability or impairment.

Tennessee Department of Health
Bureau of Health Informatics
Health Statistics
July - December 2002

Introduction

The enabling legislation establishing the traumatic brain injury registry was signed into law in May, 1993. As written, the initial legislation prohibited health care providers from reporting case information without written consent of the patient. An amendment was passed in May, 1996 resolving this issue. Data collection officially began with patients discharged during 1996. The hospitals report information on inpatients, with specific ICD-9 CM diagnosis codes, whose admission and discharge dates are different (where length of stay was 24 hours or more) and for those individuals who died. Patients seen in emergency rooms who were sent home the same day or length of stay was less than 24 hours are not included in the registry.

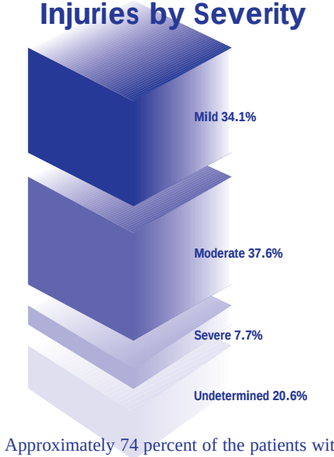
A traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force that may result in total or partial disability or impairment.

Based on the ICD-9-CM diagnosis codes, 33.8 percent of all patients experienced a “mild” injury. The injuries considered “moderate” made up 40.9 percent while 7.6 percent were considered “severe”. Five hundred eighty-five (585) cases, or 17.7 percent had an insufficient clinical description and the severity for these cases was undetermined.

The severity index is based on the clinical diagnosis of the injury.

Approximately 75 percent of the patients (excluding the patients that died) were discharged for home care requiring non-skilled or some degree of skilled assistance. This indicates a tremendous burden on the families and communities of the brain injured survivors.

Injuries by Severity



Approximately 74 percent of the patients with a severe traumatic brain injury died. This category represents 54.4 percent of the total patients that died.

For patients with a moderate brain injury (excluding deaths), 65.0 percent were discharged for home care requiring non-skilled or some degree of skilled assistance. Those discharged to residential facilities with or without skilled nursing services accounted for 11.7 percent and 16.9 percent were discharged to an inpatient rehabilitation facility.

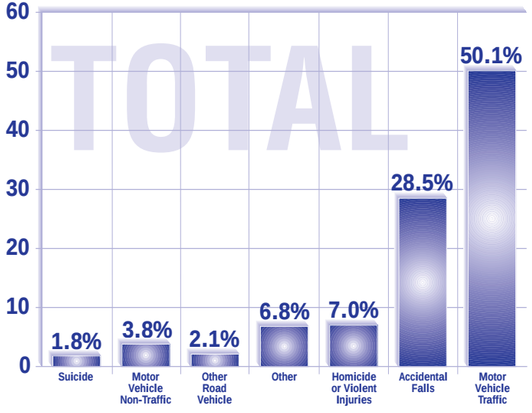
Excluding deaths, 85.9 percent of the patients with a mild brain injury were discharged to home care requiring non-skilled or some degree of skilled assistance.

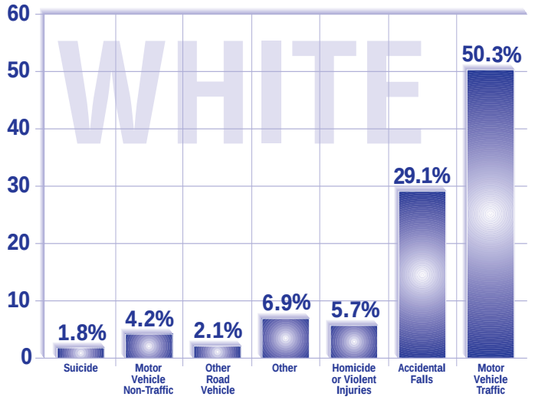
An external cause of injury permits the classification of environmental events, circumstances, and the conditions as the cause of injury. An external cause of injury was reported for 98.2% (3,239) of the 3,300 persons treated in Tennessee. The data presented by race represents 2,784 white and 276 black cases.

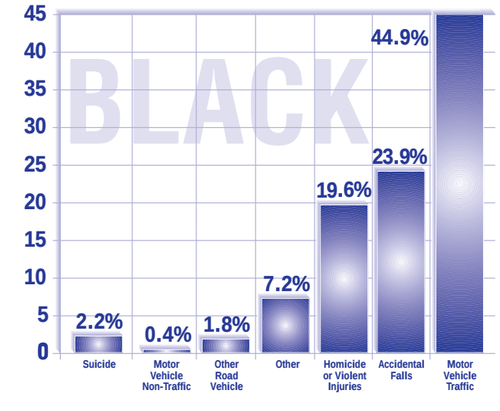
The leading cause of traumatic brain injuries, 50.1 percent (includes only cases with external cause of injury reported) was motor vehicle traffic crashes. Accidental falls were the second leading cause of brain injury and accounted for 27.9 percent. Homicide or violent injuries accounted for 7.0 percent.

For whites, the leading cause of traumatic brain injury was motor vehicle traffic crashes with 50.3 percent. The second leading cause of injury was accidental falls with 29.1 percent. The third leading cause was other accidents at 6.9 percent.

The leading cause of head injury for blacks (44.9 percent) was motor vehicle traffic crashes. Accidental falls were the second leading cause of injury with 23.9 percent. The third leading cause of injury for blacks was homicide or violent injuries with 19.6 percent.







Hospital Discharge Status by Severity of Injury

Discharge Status	Total	Severe	Moderate	Mild	Undetermined
Transferred to acute care hospital	58	3	32	13	10
Home - self care	1,920	9	683	823	405
Home - requiring non-skilled assistance	164	0	74	82	8
Home - health services or outpatient rehab	133	4	59	41	29
Residential facility w/o skilled nursing	38	5	20	5	8
Residential facility with skilled nursing	214	15	127	40	32
Inpatient rehab facility	342	28	212	68	34
Patient died	340	185	94	14	47
Other	91	2	48	29	12
Total	3,300	251	1349	1115	585

Injuries by Age and Sex

For all ages except 65 and older, males are more likely to suffer a head injury than females. This is primarily due to traffic accidents. At age 65 and older, females experience more injuries due to falls. Further analysis of the data revealed that 20.3 percent of the (69) patients less than one year of age suffered a brain injury due to homicide or an injury purposely inflicted by other persons.